**ENTITY RELATIONSHIP DIAGRAM EXERCISES**

1. A company has several departments. Each department has a supervisor and atleast one employee. Employees must be assigned to atleast one but possibly more departments. Atleast one employee is assigned to a project but an employee may be on vacation and not assigned to any projects. The important data fields are the names of the departments, projects, supervisors and employees as well as the supervisor and employee number and a unique project number. Draw an ERD to represent the information.
2. A bus company has several buses. It has one garage and covers several routes. At any one time, some buses will be on route while others are in the garage. Individual buses are used on any route and drivers are allocated to any bus. Each route has only one bus travelling on it at any one time. Passengers may have to take more than one bus on a journey. Draw an ERD to represent the information
3. A shipping company is proposing to store information about the voyages made by its ships in a computerised database. Initial system analysis has revealed the following information:

* All ships are identified uniquely by a registration number and have additional properties which include name, tonnage and date commissioned.
* Any ship may sail to any destination during the time for which it is in service with the company. Each destination has a unique destination code.
* Each voyage is assigned to a specified ship. There may be more than one voyage on a particular destination.
* A ship can hold/carry one or more containers each of which is identified by a unique number.
* A container may travel on different ships for different voyages.
* Each container holds one or more shipment and each shipment is assigned to a particular container for tracking purposes, it’s necessary to record the contents of a shipment, the date when a shipment is loaded into a container and the date when it’s unloaded from the container.
* Each shipment is given a unique shipment number and is the responsibility of one shipping agent.
* Shipping agents may be responsible for more than one shipment.

Produce an ERD that accurately models the information listed above.

1. Best television services Ltd rent television sets. Customer book retails through various sales offices with each customer being assigned to a service depot nearest to the customers home address. Each sales office arranges delivery of TV sets for its customers from a designated warehouse, each sales office servicing a number of warehouses. All warehouses carry a complete range of TV models.

* Construct an ERD based upon the above information